

Claims

What is claimed is:

1 1. A polymer material comprising a polyolefin, wherein said polymer material
2 exhibits temperature-sensitive permeability.

1 2. The polymer material, according to claim 1, wherein said polyolefin contains
2 about 50% to about 100% α -olefin by weight.

1 3. The polymer material, according to claim 1, wherein said polyolefin contains an
2 α -olefin from about 4 carbon atoms to about 12 carbon atoms in length.

1 4. The polymer material, according to claim 2, wherein said α -olefin is from about 4
2 carbon atoms to about 12 carbon atoms in length.

1 5. The polymer material, according to claim 1, wherein said polyolefin contains an
2 α -olefin selected from the group consisting of 1-butene, 1-pentene, 1-hexene, 1-heptene,
3 1-octene, 1-nonene, 1-decene, 1-undecene, and 1-dodecene.

1 6. The polymer material, according to claim 5, wherein said α -olefin is 1-dodecene.

1 7. The polymer material, according to claim 1, wherein the oxygen permeability of
2 said polymer material increases at least about 1.5-fold over a temperature range of about
3 10° C, within the temperature range of about 0° C to about 40° C.

1 8. The polymer material, according to claim 1, wherein the oxygen permeability of
2 said polymer material increases at least about 2-fold over a temperature range of about
3 10° C, within the temperature range of about 0° C to about 40° C.

1 9. The polymer material, according to claim 1, wherein the oxygen permeability of
2 said polymer material increases at least about 3-fold over a temperature range of about
3 10° C, within the temperature range of about 0° C to about 40° C.

1 10. The polymer material, according to claim 1, wherein said polyolefin contains
2 ethylene as a comonomer.

1 11. The polymer material, according to claim 10, wherein said polyolefin contains
2 an α -olefin and wherein said α -olefin is present within said polyolefin in an amount from
3 about 50% to about 75% by weight and said ethylene comonomer is present within said
4 polyolefin in an amount from about 25% to about 50% by weight.

1 12. The polymer material, according to claim 1, wherein said polymer material is a
2 film.

1 13. A package comprising a polymer material and an article, wherein said polymer
2 material separates said article from the atmosphere outside the package, wherein said
3 polymer material comprises a polyolefin and exhibits temperature-sensitive permeability.

1 14. The package, according to claim 13, wherein said article is a respiring article
2 and wherein said polymer material provides an environment within the package and around
3 said article that changes with the permeability of said polymer material.

1 15. The package, according to the claim 13, wherein said article is a respiring article
2 selected from the group consisting of a fruit, a vegetable, and a flower.

1 16. The package, according to claim 13, wherein said polyolefin contains about
2 50% to about 100% α -olefin by weight.

1 17. The package, according to claim 13, wherein said polyolefin contains an
2 α -olefin from about 4 carbon atoms to about 12 carbon atoms in length.

1 18. The package, according to claim 16, wherein said α -olefin is from about 4
2 carbon atoms to about 12 carbon atoms in length.

1 19. The package, according to claim 13, wherein said polyolefin contains an
2 α -olefin selected from the group consisting of 1-butene, 1-pentene, 1-hexene, 1-heptene,
3 1-octene, 1-nonene, 1-decene, 1-undecene, and 1-dodecene.

1 20. The package, according to claim 19, wherein said α -olefin is 1-dodecene.

1 21. The package, according to claim 13, wherein the oxygen permeability of said
2 polymer material increases at least about 1.5-fold over a temperature range of about 10° C,
3 within the temperature range of about 0° C to about 40° C.

1 22. The package, according to claim 13, wherein the oxygen permeability of said
2 polymer material increases at least about 2-fold over a temperature range of about 10° C,
3 within the temperature range of about 0° C to about 40° C.

1 23. The package, according to claim 13, wherein the oxygen permeability of said
2 polymer material increases at least about 3-fold over a temperature range of about 10° C,
3 within the temperature range of about 0° C to about 40° C.

1 24. The package, according to claim 13, wherein said polyolefin contains ethylene
2 as a comonomer.

1 25. The package, according to claim 24, wherein said polyolefin contains from
2 about 50% to about 75% α -olefin by weight and from about 25% to about 50% ethylene
3 comonomer by weight.

1 26. The package, according to claim 13, wherein said polymer material is
2 formulated as a container enclosing said article, and wherein said container is selected from
3 the group consisting of a wrap, a bag, and a box.

1 27. The package, according to claim 13, wherein said package further comprises an
2 additional material that encloses said article, and wherein said polymer material functions as
3 a window defined by said additional material.

1 28. The package, according to claim 27, wherein said additional material is selected
2 from the group consisting of paper, non-woven fabric, cardboard, and plastic.

1 29. The package, according to claim 13, wherein said package further comprises a
2 tray for supporting said article, and wherein said polymer material is wrapped around said
3 article and said tray.

1 30. The package, according to claim 13, wherein said polymer material is a film.

1 31. A method for packaging an article comprising placing said article within a
2 container that encloses and separates said article from the atmosphere surrounding said
3 container, wherein said container comprises a polymer material comprising a polyolefin,
4 and wherein said polymer material exhibits temperature-sensitive permeability.

1 32. The method, according to claim 31, wherein said article is a respiring article,
2 and wherein said polymer material provides an environment within said container and
3 around said article that changes with the permeability of said polymer material.

1 33. The method, according to the claim 31, wherein said article is a respiring article
2 selected from the group consisting of a fruit, a vegetable, and a flower.

1 34. The method, according to claim 31, wherein said polyolefin contains about 50%
2 to about 100% α -olefin by weight.

1 35. The method, according to claim 31, wherein said polyolefin contains an α -olefin
2 from about 4 carbon atoms to about 12 carbon atoms in length.

1 36. The method, according to claim 34, wherein said α -olefin is from about 4
2 carbon atoms to about 12 carbon atoms in length.

1 37. The method, according to claim 31, wherein said polyolefin contains an α -olefin
2 selected from the group consisting of 1-butene, 1-pentene, 1-hexene, 1-heptene, 1-octene,
3 1-nonene, 1-decene, 1-undecene, and 1-dodecene.

1 38. The method, according to claim 37, wherein said α -olefin is 1-dodecene.

1 39. The method, according to claim 31, wherein the oxygen permeability of said
2 polymer material increases at least about 1.5-fold over a temperature range of about 10° C,
3 within the temperature range of about 0° C to about 40° C.

1 40. The method, according to claim 31, wherein the oxygen permeability of said
2 polymer material increases at least about 2-fold over a temperature range of about 10° C,
3 within the temperature range of about 0° C to about 40° C.

1 41. The method, according to claim 31, wherein the oxygen permeability of said
2 polymer material increases at least about 3-fold over a temperature range of about 10° C,
3 within the temperature range of about 0° C to about 40° C.

1 42. The method, according to claim 31, wherein said polyolefin contains ethylene as
2 a comonomer.

1 43. The method, according to claim 42, wherein said polyolefin contains from about
2 50% to about 75% α -olefin by weight and from about 25% to about 50% ethylene
3 comonomer by weight.

1 44. The method, according to claim 31, wherein said container is selected from the
2 group consisting of a wrap, a bag, and a box.

1 45. The method, according to claim 31, wherein said container further comprises an
2 additional material, and wherein said polymer material is shaped as a window defined by
3 said additional material.

1 46. The method, according to claim 45, wherein said additional material is selected
2 from the group consisting of paper, non-woven fabric, cardboard, and plastic.

1 47. The method, according to claim 31, wherein said container further comprises a
2 tray for supporting said article, and wherein said placing step comprises wrapping said
3 polymer material around said article and said tray.

1 48. The method, according to claim 31, wherein said polymer material is a film.

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